Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Period: \_\_\_\_

Protein Synthesis (Transcription and Translation) Analogy

*Directions:* Fill in the blanks with the cell parts or processes that are analogous (similar) to the parts or processes in the story. Use the following options in the box below. Note: Some words will be used more than once!

amino acids gene mRNA tRNA nucleus

protein ribosome transcribed translated



Let's pretend that you (*a cell*) have a yearning for fried chicken (*a protein*).

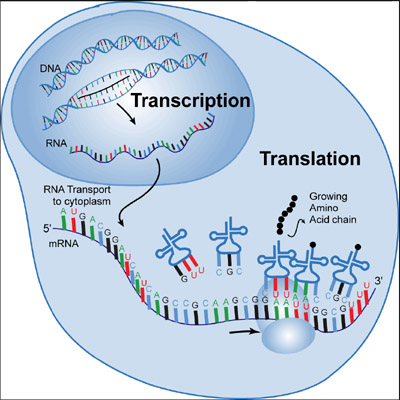
The only recipe (*\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_*, *which is* *section DNA sequence, ex. TACCGA*) you know

for delicious fried chicken (\_\_\_\_\_\_*\_\_\_\_\_\_*\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_) is found in the Library of Fried Chicken. There are many books (*chromosomes*) in this library (*\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_*). The recipe is found on one page (*gene*) of one of those books (*chromosomes*). At this library, books cannot be checked out. (*DNA cannot leave the nucleus*). However, the recipe (\_\_\_*\_\_\_\_\_\_\_\_\_\_\_*\_\_\_\_\_\_\_\_\_) for the fried chicken

(*\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_*) can be copied (\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_) on a piece of paper (*\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_*) that is able to leave the library (*\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_*).

You take the **transcribed** recipe (*\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_*) for this fried chicken (*protein*) to a kitchen (*\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_*), where fried chicken (*protein*) is always made. You (\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_) have to bring ingredients (*\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_*) to the kitchen. These ingredients (\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_) will be assembled in a particular order (\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_) to make the fried chicken (*protein*) according to the transcribed recipe (*mRNA*).

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ribosome

tRNA